

DAP222, DAP202U

Common Anode Silicon Dual Switching Diodes

These Common Anode Silicon Epitaxial Planar Dual Diodes are designed for use in ultra high speed switching applications. The DAP222 device is housed in the SC-75/SOT-416 package which is designed for low power surface mount applications, where board space is at a premium. The DAP202U device is housed in the SC-70/SOT-323 package.

Features

- Fast t_{rr}
- Low C_D
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

| Rating | Symbol | Value | Unit |
|----------------------------|--------------|-------|------|
| Reverse Voltage | V_R | 80 | Vdc |
| Peak Reverse Voltage | V_{RM} | 80 | Vdc |
| Forward Current | I_F | 100 | mAdc |
| Peak Forward Current | I_{FM} | 300 | mAdc |
| Peak Forward Surge Current | $I_{FSM}(1)$ | 2.0 | Adc |

THERMAL CHARACTERISTICS

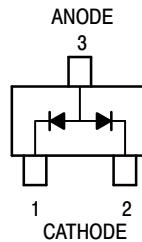
| Rating | Symbol | Max | Unit |
|----------------------|-----------|------------|------|
| Power Dissipation | P_D | 150 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature | T_{stg} | -55 ~ +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

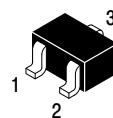


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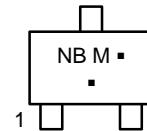
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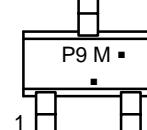
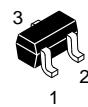
MARKING DIAGRAMS



SC-70
CASE 419



SC-75
CASE 463
STYLE 4



NB, P9 = Device Codes

M = Date Code*

▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

| Device | Package | Shipping [†] |
|--------------|--------------------|-----------------------|
| DAP202UG | SC-70 (Pb-Free) | 3000 / Tape & Reel |
| DAP222G | SC-75 (Pb-Free) | 3000 / Tape & Reel |
| DAP222T1G | SC-75 (Pb-Free) | 3000 / Tape & Reel |
| NSVDAP222T1G | SC-75 (Pb-Free) | 3000 / Tape & Reel |

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

| Characteristic | Symbol | Condition | Min | Max | Unit |
|---|----------------------------|---|-----|-------------|-----------------|
| Reverse Voltage Leakage Current | I_R | $V_R = 70\text{ V}$ | — | 0.1 | μAdc |
| Forward Voltage | V_F | $I_F = 100\text{ mA}$ | — | 1.2 | Vdc |
| Reverse Breakdown Voltage | V_R | $I_R = 100\text{ }\mu\text{A}$ | 80 | — | Vdc |
| Diode Capacitance | C_D | $V_R = 6.0\text{ V}, f = 1.0\text{ MHz}$ | — | 3.5 | pF |
| Reverse Recovery Time DAP222 DAP202U | $t_{rr}(2)$ $t_{rr}(3)$ | $I_F = 5.0\text{ mA}, V_R = 6.0\text{ V}, R_L = 100\text{ }\Omega, I_{rr} = 0.1 I_R$ $I_F = 5.0\text{ mA}, V_R = 6.0\text{ V}, R_L = 50\text{ }\Omega, I_{rr} = 0.1 I_R$ | — | 4.0 10.0 | ns |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. $t = 1\text{ }\mu\text{s}$
2. t_{rr} Test Circuit for DAP222 in Figure 4.
3. t_{rr} Test Circuit for DAP202U in Figure 5.

TYPICAL ELECTRICAL CHARACTERISTICS

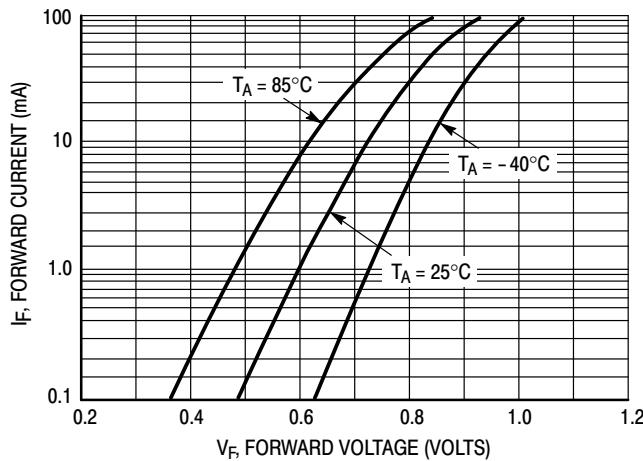


Figure 1. Forward Voltage

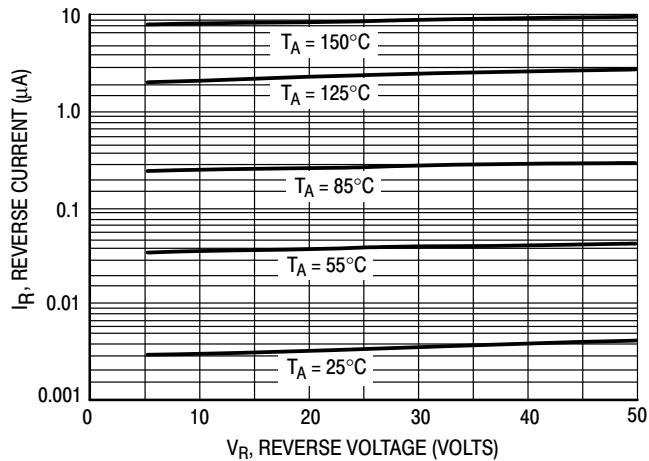


Figure 2. Reverse Current

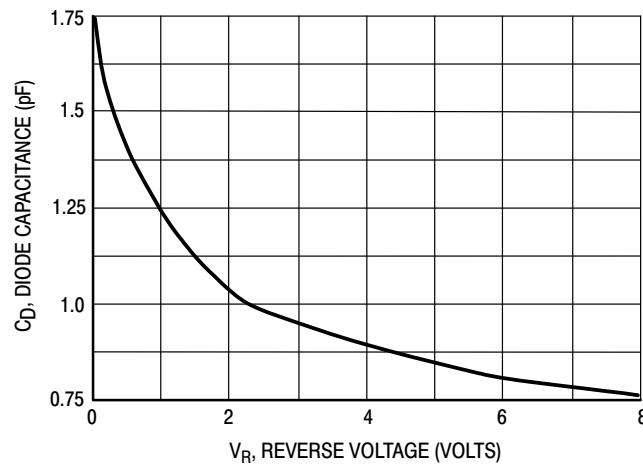


Figure 3. Diode Capacitance

DAP222, DAP202U

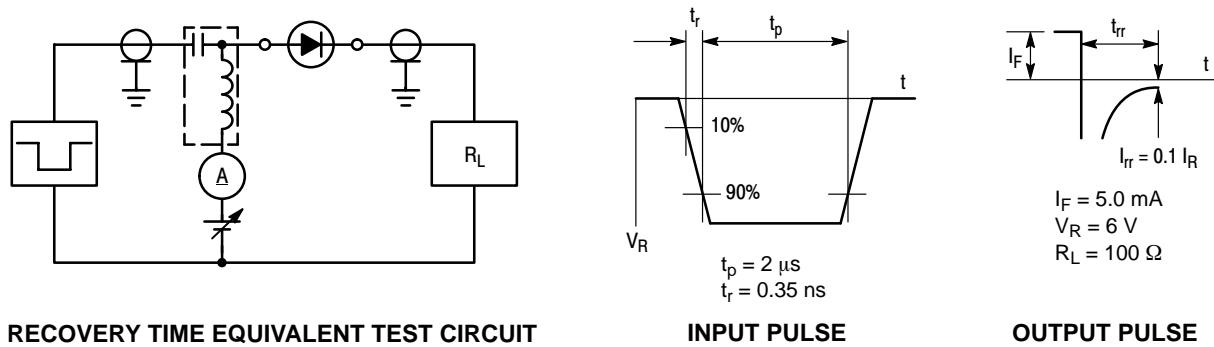


Figure 4. Reverse Recovery Time Test Circuit for the DAP222

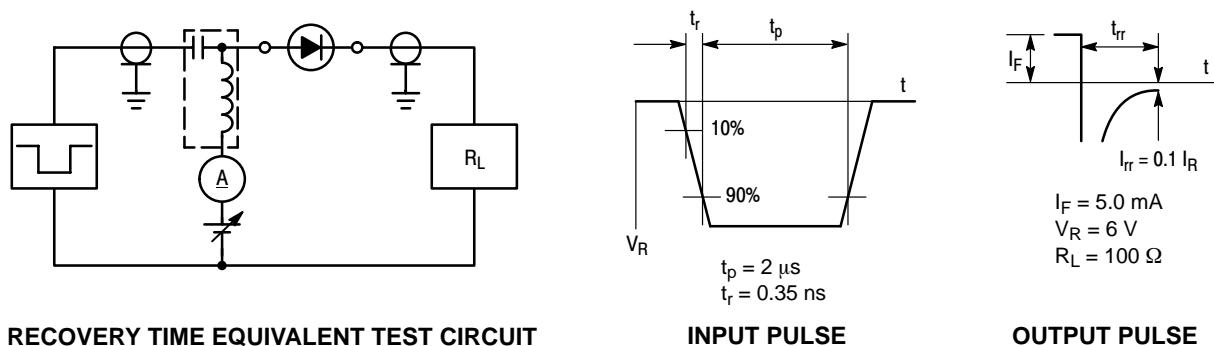
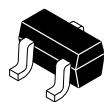


Figure 5. Reverse Recovery Time Test Circuit for the DAP202U

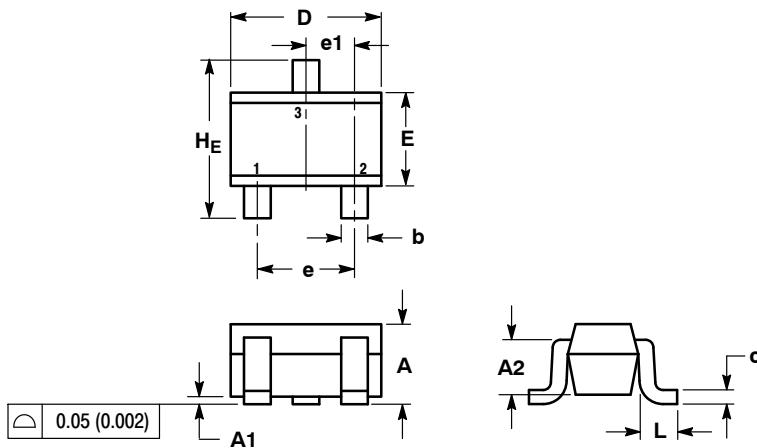
MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

ON Semiconductor®



SCALE 4:1



SC-70 (SOT-323) CASE 419-04 ISSUE N

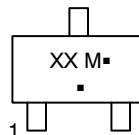
DATE 11 NOV 2008

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.80 | 0.90 | 1.00 | 0.032 | 0.035 | 0.040 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A2 | 0.70 | REF | | 0.028 | REF | |
| b | 0.30 | 0.35 | 0.40 | 0.012 | 0.014 | 0.016 |
| c | 0.10 | 0.18 | 0.25 | 0.004 | 0.007 | 0.010 |
| D | 1.80 | 2.10 | 2.20 | 0.071 | 0.083 | 0.087 |
| E | 1.15 | 1.24 | 1.35 | 0.045 | 0.049 | 0.053 |
| e | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| e1 | 0.65 | BSC | | 0.026 | BSC | |
| L | 0.20 | 0.38 | 0.56 | 0.008 | 0.015 | 0.022 |
| H_E | 2.00 | 2.10 | 2.40 | 0.079 | 0.083 | 0.095 |

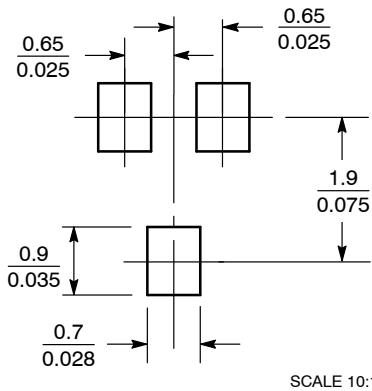
GENERIC MARKING DIAGRAM



XX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

SOLDERING FOOTPRINT*



SCALE 10:1 (mm)
(inches)

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

STYLE 1:
CANCELLED

STYLE 2:
PIN 1. ANODE
2. N.C.
3. CATHODE

STYLE 3:
PIN 1. BASE
2. Emitter
3. Collector

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 6:
PIN 1. Emitter
2. BASE
3. COLLECTOR

STYLE 7:
PIN 1. BASE
2. Emitter
3. COLLECTOR

STYLE 8:
PIN 1. GATE
2. SOURCE
3. DRAIN

STYLE 9:
PIN 1. ANODE
2. CATHODE
3. CATHODE-ANODE

STYLE 10:
PIN 1. CATHODE
2. ANODE
3. ANODE-CATHODE

STYLE 11:
PIN 1. CATHODE
2. CATHODE
3. CATHODE

| | | |
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| DESCRIPTION: | SC-70 (SOT-323) | PAGE 1 OF 1 |

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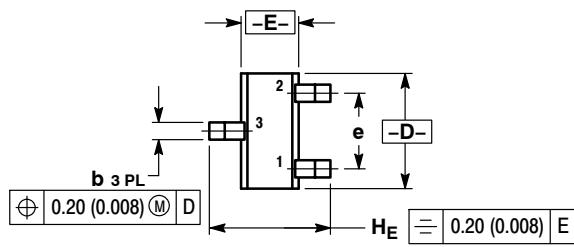
MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

ON Semiconductor®



SCALE 4:1

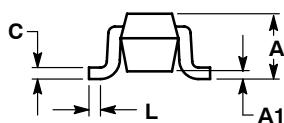


SC-75/SOT-416
CASE 463-01
ISSUE G

DATE 07 AUG 2015

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.70 | 0.80 | 0.90 | 0.027 | 0.031 | 0.035 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| b | 0.15 | 0.20 | 0.30 | 0.006 | 0.008 | 0.012 |
| C | 0.10 | 0.15 | 0.25 | 0.004 | 0.006 | 0.010 |
| D | 1.55 | 1.60 | 1.65 | 0.061 | 0.063 | 0.065 |
| E | 0.70 | 0.80 | 0.90 | 0.027 | 0.031 | 0.035 |
| e | 1.00 | BSC | | 0.04 | BSC | |
| L | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| H_E | 1.50 | 1.60 | 1.70 | 0.060 | 0.063 | 0.067 |



STYLE 1:
PIN 1. BASE
2. Emitter
3. Collector

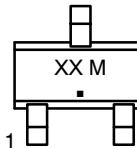
STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

STYLE 3:
PIN 1. ANODE
2. ANODE
3. CATHODE

STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

STYLE 5:
PIN 1. GATE
2. SOURCE
3. DRAIN

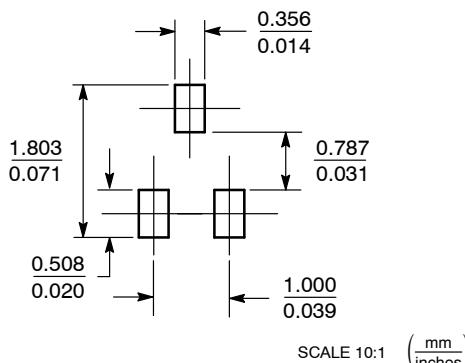
GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code
▪ = Pb-Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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